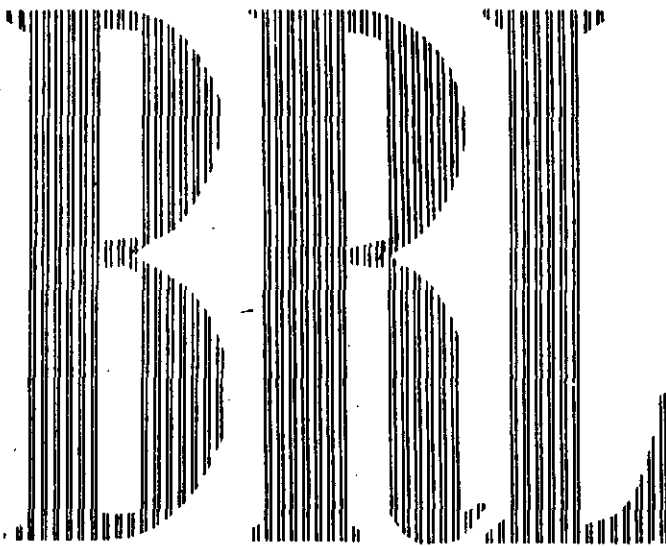




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OCTOBER 1962

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AUTOMATIC SELECTION OF DIGITAL ELECTRONIC COMPUTERS (ASDEC)

COUNTED IN

Martin H. Weik
Violet J. Confer
Ralph R. Rosenberg

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STINFO BRANCH
BRL, APG, MD. 21005

Department of the Army Project No. 503-06-002
BALLISTIC RESEARCH LABORATORIES

ABERDEEN PROVING GROUND, MARYLAND

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MWeik/VJConfer/RRRosenberg/vjc
Aberdeen Proving Ground, Md.
October 1962

AUTOMATIC SELECTION OF DIGITAL ELECTRONIC COMPUTERS (ASDEC)

ABSTRACT

Engineering and programming condensed descriptions of 327 electronic digital computing and data processing systems in the United States are given in a set of comparative charts, automatically prepared from a deck of punched cards. A method for automatic selection and evaluation of computing and data processing systems is described.

TABLE OF CONTENTS

I.	AUTOMATIC SELECTION OF DIGITAL ELECTRONIC COMPUTERS (ASDEC)	7
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I. AUTOMATIC SELECTION OF DIGITAL ELECTRONIC COMPUTERS (ASDEC)

ASDEC is a first attempt at proving the feasibility of automating the process of comparative evaluation of electronic digital computing systems. A quantitative and qualitative engineering and programming description of each of 327 computing and data processing systems, that are, or ever have been, operative in the United States, has been condensed and squeezed on two 80 column punched cards. The data have been taken from three computer survey reports prepared by the Ballistic Research Laboratories in 1955, 1957, and 1961, and from recent announcements by manufacturers for those systems which have evolved since the completion of the third survey. The computer descriptions are prepared in accordance with the following outline:

- Official Name of Computer
- Manufacturer's Name
- Manufacturer's Address
- Application
- Quantity of Systems Produced
- Vintage
- Cost of Typical System
- Rental Rate of Typical System
- Programming Languages
- Word Length
- Character Type
- Number of Index Registers
- Add Time (Including Access)
- Multiply Time (Including Access)
- Divide Time (Including Access)
- Add Time (Excluding Access)
- Multiply Time (Excluding Access)
- Divide Time (Excluding Access)
- High Speed Storage Access Time
- High Speed Storage Cycle Time
- High Speed Storage Capacity - Words
- High Speed Storage Medium
- High Speed Storage Capacity - Binary Equivalent
- High Speed Storage Figure of Merit
- Bulk Storage Capacity
- Bulk Storage Medium
- Input-Output Devices
- Magnetic Tape Transfer Rate
- Quantity of Magnetic Tape Stations
- Magnetic Tape Width
- Quantity of Magnetic Tape Tracks/Tape
- Arithmetic Point
- Instructions per Word
- Addresses per Instruction
- Arithmetic Type
- Quantity of Vacuum Tubes
- Quantity of Transistors
- Quantity of Crystal Diodes
- Power Requirement of Typical System
- Size of Typical System
- Weight of Typical System

The comparative table shown in Chapter IV is a print-out of the contents of the 654 cards. The cards can be handled with punch card machinery for sorting, collating, searching or printing on any set of criteria. The contents of the cards can be stored in a computing system and a computer program written to permit evaluation of systems in accordance with a given set of criteria. One such approach might be, for example, to (1) translate the computer application requirement into a set of desired computer programming and engineering characteristics, stating numerical values or ranges of values, and (2) weight each of the characteristics in accordance with their relative importance. These two steps, of course, are accomplished independent of any given system. Then, (3) eliminate all obviously non-competitive systems, such as those developed by government agencies or universities, on the assumption that they are not for sale, if acquisition of a system is intended, (4) write a computer program which will examine each characteristic, assign the weights or fractions thereof, in accordance with a prescribed rule, and accumulate a score for each system, (5) print out, in sequence according to score, the names and the characteristics of all systems and finally, (6) evaluate the relative "scholastic" achievement of each system, as a measure of its ability to cope with the problems of the original application. The only step required to keep ASDEC up to date is to punch a pair of cards for each computing system with the necessary descriptive information. One person in about thirty minutes can select, sort and code the information, and a couple of minutes are required to punch the cards. All further handling is automatic.

1. BRL Report No. 971, A Survey of Domestic Electronic Digital Computing Systems, M. Weik, December 1955,
BRL Report No. 1010, A Second Survey of Domestic Electronic Digital Computing Systems, M. Weik, June 1957,
BRL Report No. 1115, A Third Survey of Domestic Electronic Digital Computing Systems, M. Weik, March 1961.

II. SUMMARY OF ASDEC SYSTEM COLUMNAR HEADINGS

Column	Entry
A	<u>Name of Computer</u>
B	<u>Name of Manufacturer</u>
C	<u>Address of Manufacturer</u>
D	<u>Nature of Manufacturer, Intended Primary Application, and Quantity of Systems Produced</u>
	1. Manufacturer
	One symbol expresses the nature of the manufacturer
	I - Industry
	G - Government
	U - University
	2. Primary Application
	One symbol expresses the intended application
	Special Purpose General Purpose Use
	1 C Business Only
	2 S Scientific Only
	3 B Business and Scientific
	4 T Scientific, Business, Real Time Control
	6 M Military Real Time Control
	7 F Military Scientific
	8 L Military Business
	9 A Digital Differential Analyzer
	3. Quantity of Systems Produced
	One symbol expresses the approximate quantity of systems produced.
	1 One
	2 Several
	3 Dozens
	4 Hundreds
	5 Thousands
E	<u>Year of Development and/or Initial Operation</u>
	Two digits express the vintage.
F	<u>Cost and Monthly Rental</u>
	Two significant digits plus exponent express the dollar amounts.
G	<u>Programming Languages</u>
	Four symbols express the programming languages utilized.
	A ALGOL P FORTRANSIT
	B Burroughs Algebraic Compiler Q SOAP
	C COBOL R RAMAC
	D HELP S SPAR
	E RCA Narrator T SAP
	F FORTRAN U SHARE
	G GE Commercial Compiler V MADCAP
	J ADD Y X-6
	K IBM 704 Simulator 1 FACT
	L Algebraic Compiler 2 MACRO
	M MOBIDIC Assembly Program 3 NORAD
	N NEAT 4 SYMBOL
	O FORAST 6 650 Simulator
	Z No known common programming language, but uses a language of its own

Column	Entry																				
H	<u>Word Length and Digit Type</u> 1. Word Length Two significant digits express the binary equivalent length and type of digit. 2. Digit Type One symbol expresses the type of characters in the word. A - Alphanumeric Characters B - Binary Digits D - Decimal Digits OPT - Various binary equivalent lengths and types are available																				
I	<u>Number of Index Registers</u> Two significant digits express the number of index registers. 99 Indicates 99 or more HS Indicates that the entire high speed storage is indexable.																				
J	<u>Operation Times, Including Access Time</u> Two significant digits plus exponent express the operation time in nanoseconds. 1. Add time 2. Multiply time 3. Divide time																				
K	<u>Operation Times, Excluding Access Time</u> Two significant digits plus exponent express the operation time in nanoseconds. 1. Add time 2. Multiply time 3. Divide time																				
L	<u>High Speed Storage Access Time and Cycle Time</u> 1. Access Time Two significant digits plus exponent express the storage access time. 2. Cycle Time Two significant digits plus exponent express the storage cycle time.																				
M	<u>High Speed Storage Capacity, Medium, and Binary Equivalent Capacity</u> 1. Capacity Three significant digits plus exponent express the number of words. 2. Medium One symbol specifies the storage medium. <table><tr><td>B</td><td>Electromagnetic</td><td>T</td><td>Thin Film</td></tr><tr><td>C</td><td>Core</td><td>V</td><td>Vacuum Tube</td></tr><tr><td>E</td><td>Electrostatic</td><td>Q</td><td>Acoustic Quartz Delay Line</td></tr><tr><td>H</td><td>Acoustic HG Delay Line</td><td>R</td><td>Mercury Delay Line</td></tr><tr><td>M</td><td>Magnetostrictive Delay Line</td><td>S</td><td>Register</td></tr></table> 3. Binary Equivalent Capacity Three significant digits plus exponent express the total number of binary digits.	B	Electromagnetic	T	Thin Film	C	Core	V	Vacuum Tube	E	Electrostatic	Q	Acoustic Quartz Delay Line	H	Acoustic HG Delay Line	R	Mercury Delay Line	M	Magnetostrictive Delay Line	S	Register
B	Electromagnetic	T	Thin Film																		
C	Core	V	Vacuum Tube																		
E	Electrostatic	Q	Acoustic Quartz Delay Line																		
H	Acoustic HG Delay Line	R	Mercury Delay Line																		
M	Magnetostrictive Delay Line	S	Register																		
N	<u>High Speed Storage Figure of Merit</u> $10 \log_{10}$ Total Binary Digit Capacity/Access Time in Seconds Three significant digits express the figure of merit.																				

O Capacity of Bulk Storage and Medium

1. Capacity

Two significant digits plus exponent express the total number of binary digits.

2. Medium

One symbol expresses the type of storage medium.

G	Disc	T	Magnetic Ledger Cards
J	Drum	P	Potentiometers
K	Magnetic Tape Bin	R	Disc, Drum and Tape
M	Disc and Drum	+	Several Others
N	Disc and Tape	O	Drum and Tape

P Input-Output Devices

Five symbols express the types of input-output devices.

1	Card Reader and Punch	9	Analog to Digital and vice versa
2	Magnetic Tape	D	Microfilm
3	Paper Tape	G	Optical Scanner
4	Printer	S	Registers
5	Cathode Ray Tube	P	Potentiometers
6	Plotter	T	Magnetic Ledger Cards
7	Typewriter and Teletype	+	Several Others
8	Data Link		

Q Characteristics of Magnetic Tape

1. Speed

Two significant digits plus exponent express the alphanumeric characters per second transfer rate.

2. Quantity of Stations

Two significant digits express the number of tape stations that may be connected.

99 implies 99 or more	AB implies 108
AA implies 256	AC implies 512

3. Tape Width

One significant digit expresses the number of eighths of an inch of tape width.

8 implies one inch or wider
A implies 3 inches
B implies 2 inches

4. Number of Tracks

One significant digit or symbol expresses the number of tracks on tape.

A implies 16	E implies 11
B implies 10	F implies 22
C implies 12	G implies 42
D implies 31	H implies 13

R Arithmetic Point, Instructions per Word, Addresses per Instruction, and Type of Digital System

1. Arithmetic Point

One symbol expresses the nature of the arithmetic point.

I	Fixed Point	B	Fixed and Floating Point
O	Floating Point	R	Ring Adder

2. Quantity of Instructions per Word

One digit expresses the number of instructions per word.

H	1/2	V	Variable
---	-----	---	----------

Column Entry

3. Quantity of Addresses per Instruction

One digit expresses the number of addresses in each instruction.

A	1+1	V	Variable
F	1+3	T	1 or 2

4. Type of Digital System

One digit expresses the type of digital system.

0	Asynchronous, Sequential, Serial
1	Asynchronous, Sequential, Parallel
2	Asynchronous, Concurrent, Serial
3	Asynchronous, Concurrent, Parallel
4	Synchronous, Sequential, Serial
5	Synchronous, Sequential, Parallel
6	Synchronous, Concurrent, Serial
7	Synchronous, Concurrent, Parallel

S Component - Tubes, Transistors and Diodes

1. Tubes

One significant digit plus exponent expresses the number of tubes.

2. Transistors

One significant digit plus exponent expresses the number of transistors.

3. Diodes

One significant digit plus exponent expresses the number of diodes.

T Power, Space and Weight of Typical System

1. Power

One significant digit plus exponent expresses the power in watts.

2. Space

One significant digit plus exponent expresses the floor area in square feet.

3. Weight

One significant digit plus exponent expresses the weight in pounds.

III. DETAILED DISCUSSION OF COLUMNAR HEADINGS

A. Name of Computing System

The first column, labelled A, lists the 327 different electronic digital computing and data processing systems that were or are operational in the United States. The name used for the computer is the proper name assigned to the system by the maker. A more detailed and cross-referenced "Thesaurus of the Names of Electronic Digital Computers and Data Processors" is given in BRL Technical Note No. 1472 by M. Weik and V. J. Confer. Care must be exercised in dealing with computer names, since many machines have appeared under several designations or aliases.

B. Name of Manufacturer

The second column, labelled B, in the accompanying master table of electronic digital computing systems, shows that there are 89 known and listed manufacturers or developers of electronic digital computing and data processing systems in the United States. These manufacturers are industrial, governmental, educational and research organizations.

C. Address of Manufacturer

This column is self explanatory.

D. Nature of Manufacturer, Intended Primary Application, and Quantity of Systems Produced

1. Nature of Manufacturer

It sometimes becomes practical to seek and select only those systems which are manufactured by an industrial manufacturer, on the basis that one can thus readily obtain replicas of the system, perhaps as an off-the-shelf item. Occasionally it is interesting to discover all the university or all the government developed systems. A search for a system of particular characteristics can be considerably narrowed by use of this column.

2. Primary Intended Application

This column attempts to classify systems into various categories of application. We are reminded that these are not the only categories, and we must also realize that a machine, although intended for a specific use, may also have many other uses. In our case, a numeral indicates a special purpose application, whereas an alphabetic character indicates a general purpose application. Thus, for example, a 2 implies that the system was designed for a special purpose scientific application, whereas an S indicates the system was intended as a general purpose system to perform scientific calculations. Here again, if one is interested in selection of specific types, one can again restrict the area of consideration through the use of this column.

3. Quantity of Systems Produced

This single digit signifies the approximate quantity of each system that one may expect to find in existence. Quantity, in terms of one, several, dozens, hundreds, and thousands, is not very precise, however, in view of the fact that at least one or two leading manufacturers consider the information to be proprietary, and since the quantity changes daily as production schedules are met, a more precise figure cannot be obtained.

E. Year of Development and/or Initial Operation

Sometimes it becomes difficult to "pin" a year or vintage label on a computing system. The year of concept, development, prototype, advance engineering model, pilot model, internal operation, customer installation and customer acceptance can all be different. The year used in the table is a kind of "effective" or "launching" year, somewhere midway between initial concept and final customer acceptance of a line model.

F. Cost and Monthly Rental

A pair of numbers, each consisting of two significant digits and an exponent, specify the approximate cost of a typical configuration of equipment and the monthly rental rate for one shift of operation. A "typical system" implies one with a nominal amount of balanced storage, two or three input-output devices, perhaps two to four tape stations, and of course, the main frame and necessary power units. However, air conditioners are not included unless they are an integral part of the computing system. The figures in the charts are given in dollars. These are subject to change. It should also be noted that some figures signify cost of completion, for example the U. S. Army's not-for-sale BRLESC system, while other figures indicate the current market selling price.

G. Programming Languages

This column signifies the kind of programming languages, including compilers and symbolic languages that are common to two or more systems. The Z is used to indicate that there is a programming language available or in use with the system in addition to its own machine language, which of necessity, every machine must have. The blank indicates that there are no known programming languages, other than the machine language, in use with the system. Perhaps the greatest significance lies in the availability of COBOL, ALGOL, and FORTRAN.

H. Word Length and Digit Type

It becomes desirable, at times, to identify those systems which have a word length lying within a given range. To suit this purpose, all word lengths are converted to equivalent binary digits. The conversion factors are 3.4 for decimal to binary and 6 for alphanumeric to binary. Thus, a 10 decimal digit word length is equivalent to 34 binary digits, and 8 alphanumeric characters is equivalent to 48 binary digits. In order to describe the nature of the characters comprising the word, they are identified by the given code. Thus, an entry like 34D implies a 10 decimal digit word length. In some instances the word length is optional at time of purchase, thereafter fixed at some selected value. These are defined as variable word length systems. If the word length is never fixed, that is to say, it is operationally variable and thus can be varied according to the will of the programmer, we have concluded that the effective word length is but one character. For an alphanumeric system, the word length thus becomes 06A, or 6 binary digits, comprising a single character.

I. Number of Index Registers

J. Operation Times, Including Access Time

K. Operation Times, Excluding Access Time

L. High Speed Storage Access Time and Cycle Time

The expressions in Columns I-J-K-L are self explanatory and are adequately defined in the columnar headings. These are perhaps the most significant set of columns in the chart, since here one may search for systems which are satisfactory from the standpoint of speed. Nanoseconds are used in order to eliminate the need for negative exponents.

M. High Speed Storage Capacity, Medium, and Binary Equivalent Capacity

The high speed storage capacity is expressed in words with two significant digits and an exponent. The fourth character codes the nature of the storage medium. Perhaps the only real measure of storage capacity is the total number of equivalent binary digits that can be stored. Thus a 4,096-word, 68-binary-digits-per-word storage is of greater capability or capacity than an 8,192-word 24 binary-digits-per-word storage unit. Whether the stored characters are binary digits, decimal digits, or alphanumeric characters is also of significance. The ability to store a given number of alphanumeric characters represents a greater capability than the ability to store the same number of decimal digits. Here again the weighting factors of 3.4 and 6 are used for decimal digits and alphanumeric characters. Thus, the total equivalent binary storage capacity is the triple product of the number of words, the number of characters per word and the weighting factors. In cases where the storage capacity is optional to the buyer, the largest capacity available is cited.

N. High Speed Storage Figure of Merit

The high speed storage figure of merit given in the next column, attempts to serve as a rating factor for high-speed storage units. One is often in a position to trade space for time. In other words, time can be saved if an additional investment is made in hardware. An outstanding example of this "trade-off" is found in the parallel versus serial arithmetic unit, viz., handle all digits at once with more hardware and save time, or one digit at a time, with less hardware, but require much more time. The figure of merit puts space or total equivalent binary capacity in the numerator and the access time in seconds in the denominator. Since the ratio reaches 12 figures, it becomes practical to look only at the logarithm, and, to avoid the use of a decimal point, the logarithm of the ratio is multiplied by 10.

O. Capacity of Bulk Storage and Medium

Some estimate should be made of the capacity of bulk storage, auxiliary storage, back-up storage, or slow-speed storage. Here we mean the electromechanical storage type of media like disc, drums, tape bins, etc. The dollar cost is less but it is costly in terms of time. Comparison between systems is facilitated by converting all capacities into total binary equivalent capacities as in the case of high speed storage. Two significant digits and an exponent, along with the code symbol which cites the medium, are given.

P. Input-Output Devices

Computing systems come with a myriad of input-output devices. It is possible to associate almost any type of input-output device with almost any electronic digital computing system. If one insists on an optical scanner to read printed alphabetic data directly into an IBM 7090, it is no doubt quite possible.

However, it is interesting to list only those devices which are normally found with a particular system, those which the manufacturer supplies as a standard piece of equipment. These have been coded and five are listed with each system. If more than five standard input-output devices are available, four are cited and the symbol + is used to signify that there are others, too numerous to list in the space available. The existence of a + sign implies that there are a prodigious assortment of input-output devices that are available for use with the system and that the necessary output channels and trunks are provided in the standard model of the system.

Q. Characteristics of Magnetic Tape

By far the standard or normal computer appears to be one constructed with core storage, backed up by drums and/or magnetic tape. We treated of drums in Column O. This column specifies the detail characteristics of magnetic tape. The columnar headings are self explanatory.

R. Arithmetic Point, Instructions per Word, Addresses per Instruction and Type of Digital System

These items are self explanatory. It should be recalled here, however, that the execution time for an instruction (Columns J and K) must be evaluated in view of the addressing scheme. Thus, for one machine to execute a one-address instruction in less time than for another machine to execute a complete three-address instruction is not necessarily indicative that the former is faster than the latter.

S. Components - Tubes, Transistors, and Diodes

If one is searching for and finds those systems which meet a given set of criteria, perhaps it might be interesting to note the component counts. These figures may be indicative of reliability, size, power requirements, vulnerability, weight, or they may simply indicate the magnitude of the equipment being demanded. Looking at the mean and extremes of the component count, one might determine, for example, as a practical matter, that in order to accomplish the desired task or meet the stated requirement, a certain component count is demanded. A system with very much fewer components may be looked upon with suspicion as not fitting the bill, one with very much more than a "normal" number of components may be overdesigned, have too many frills or undesired capabilities. The suspicion, of course, must be investigated.

T. Power, Space and Weight of Typical Systems

The power does not include air conditioning unless it is an integral part of the system. The space includes access aisles for large, multi-component systems, but only the occupied floor or bench area for small systems. In many instances, especially for the smaller systems, the weight does not include the peripheral or input-output devices.

IV. ASDEC INPUT DATA

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	
ABEL ADDRESSOG 900 ADEC AF CRC ALWAC 11	GEORGEWASH UNIVERS ADDRESSOGRAPHMULTI HARVARD UNIVERSITY REMRAND UNIVAC DIV ALWAC COMPUTER DIV	707 22STNW WASHINGTON 7 DC 12008ABBITRD CLEVELAND OHIO CAMBRIDGE MASSACHUSETTS 315 PARK AV S NY 10 NY. 13040SCERISEAV HAWTHORNECALIF	US162 IC 62 US151604 IS156804 IS254503							55D 445136 35D 903105 33B					444J2 753J357 703J37			113453 1 421 145243 IV1432 43433123		
ALWAC 111 ALWAC 111E ALWAC 800 AMOS 1V ANASA 27	ALWAC COMPUTER DIV ALWAC COMPUTER DIV ALWAC COMPUTER DIV NATIONALBURSTANDAR LITTON SYSTEMS INC	130405CERISEAVEHAWTHORNECALIF 130405CERISEAV HAWTHORNECALIF 130405CERISEAVEHAWTHORNECALIF CONNECTICUT VANNESAV WASHDCG2160 6700ETONAVE CANOGAPARK CALIFIM 62	IS254603 IS255773 IB156 G2160 IM 62							33B 33B01 45D 12D01	504176176 105176176 963214354	504 403	0320C1061063 5000C2253087	144J1347 274J1234+ 127J12347 103J378		2131647	B21432 1V148271145 12154152141421 H1	53532123 533133 1421		
ANASQ 28V EDC ANASQ 28V MDC ANASQ 54 ANFSQ 1 ANFSQ 7 SAGE	INT BUS MACH CORP INT BUS MACH CORP LITTON SYSTEMS INC LITTON SYSTEMS INC INT BUS MACH CORP	590 MADISON AV NY 22 NY 590 MADISON AV NY 22 NY 6700ETONAVE CANOGAPARK CALIFIM 62 6700ETONAVE CANOGAPARK CALIFIM 62 590 MADISON AVE NY 22 NY	I2 57 I2 57 IM 62 IM 62 I7357							26B 23B	624375375 243264294	164335335 243264294	243	973J589 594J4589			11A4 1117	624332 231482	81 32	
ANFSQ 8 SAGE ANFSQ 31V ANFSQ 32V ANMJQ 1 REDSTO ANMSM	INT BUS MACH CORP INT BUS MACH CORP INT BUS MACH CORP AUTONETICS CORP SPERRY GYROSCOPE C	590 MADISON AVE NY 22 NY 590 MADISON AV NY 22 NY 590 MADISON AV NY 22 NY 9150EIMPERIALHWY DOWNEYCALIF GREAT NECK LI NY	I7357 IB258 IB258 I7 58803 IM162							ZZZ Z Z	32B04 50B08 50B08 56B02	123163603 153383603 153383603 2405	3602103603 252 252 573	6962C2254 1313C6554 1643C8194 4101G 0160S8950	116 124 125 174G357 072	445J12458 356J1478 356J1347 147G357	1930847 4232447 6232447 00	1115 1117 1117 114	547225 1525157215 2535159215 133012 131192	752455 157215 159215 133012 131192
ANTYK 4V COMP ANTYP 6V BASIC ANTYP 7V INFOR ANTYP 1 ANTYP 2	PHILCO CORPORATION PHILCO CORPORATION LITTON BUS MACH CORP LITTON SYSTEMS INC LITTON SYSTEMS INC	3900WELSHRD WILLOW GROVE PA 3900WELSHRD WILLOW GROVE PA 590 MADISON AV NY 22 NY 6700ETONAVE CANOGAPARK CALIFIM 62 6700ETONAVE CANOGAPARK CALIFIM 62	IM160 IL259504 IL 61 IM 62 IM 62							Z M	38B 38B07 38B04	243254254 243244244 213394424	123 123 802	4101C1553 4101C1563 4101C1553	101 101 103	37 2567 147G237	233088A 453568A 233168A	1114 1114 1115	143343 1492248143 1463324042	22 143
ANUJQ 2 XA 1 ANUSQ 20 ANUYK 1 ASC 15 ASI 210	HRB SINGER INC REMRAND UNIVAC DIV TR WOOLDRIDGE INC INT BUS MACH CORP ADV SCI INSTRUMENT	SCIENCE PARK STATECOLLEGE PA 315 PARK AV S NY 10 NY 8433FALLBROOKKAVCANOGAPARKCALIM 62 590 MADISON AV NY 22 NY 5249HANSONCTMINNEAPOLIS22MINIT	IM 62 IF160 62224662Z IM 59 IM 261214533Z							Z	30B07 15B03 27B 21B03	163743114 123573573 314205 3602503623	962743114 302602 164195 202463563	802 102	3282C9833 3282C4923 8191C1723	111 112	23479 1237 12347	2130447 2130447 76233247	1111 1113 1324 1117	1434333123 622052 12 12 0033334 233113
ASI 420 ASI ADVANCE II ATHENA AVIDAC BAR COL DEC DI	ADV SCI INSTRU INC ADV SCI INSTRU INC REMRAND UNIVAC DIV ARGONNE NATION LAB BARBER COLMAN CO	5249HANSONCTMINNEAPOLIS22MINIT 5249HANSONCTMINNEAPOLIS22MINIT 315 PARK AV S NY 10 NY UNIV OF CHICAGO LEMONT ILL ROCKFORD ILL	IM 61 IM 62 I7 61 US150 IB 56							F2	42BHS 42BHS 24B 40B 68D	5602603963 402333 403524105403 503165165 605207207	202563903 102202 403524105403 183155155353 605207207	102 102202	3282C1374 3282C1374 2560C6141082 5120E2052087	121 121 144J 3	12347 124 4820147 112J7	6233247 6233247 4820147 121233 24	78117005354 7811700 7334534224 121233 24	338123 632123 534224 132321
BENDIX CUBIC BENDIX D12 BENDIX G15 BENDIX G20 BENDIX G21	BENDIX CORPORATION BENDIX COMPUTER DI BENDIX CORPORATION BENDIX CORPORATION BENDIX CORPORATION	5630ARBORVITAEEAV LOS A45 CALIF 5630ARBORVITAEEAVLOSANG45CALIFIA 5630ARBORVITAEEAV LOS A45 CALIS456493152Z 5630ARBORVITAEEAV LOS A45 CALIT 57484123SLIZ 5630ARBORVITAEEAV LOS A45 CALIS 61964243SLIZ	60 54553 IS456493152Z IS 57484123SLIZ 61964243SLIZ								29B 27D 29B 33B63 33B99	433 544955955274 273703114 273703114	842 842	3282C1084 9832C3244	111 116	12348 12348	603NL8B0 603NL8B0	117229344 0117623415	331123 431142 23834123 336013 331123 933163	
BOGART BRLESC BURROUGHS B250 BURROUGHS B251 BURROUGHS B260	REMRAND UNIVAC DIV BALLISTIC RES LABS BURROUGHS CORP BURROUGHS CORP BURROUGHS CORP	315 PARK AV S NY 10 NY ABERDEEN PROVING GROUND MD 6071SECONDAV DETROIT 32 MICHIC 62 6071SECONDAV DETROIT 32 MICHIC 62 6071SECONDAV DETROIT 32 MICHIC 62	IS156 GF161295 62 62 62 184372							FJ	68B63 502253653	102203603 451142	4010C 2462C1674	125 175J	237 1234+	124288A	8317 639315	342334		
BURROUGHS B270 BURROUGHS B280 BURROUGHS B285 BURROUGHSB285 BURROUGHS D103	BURROUGHS CORP BURROUGHS CORP BURROUGHS CORP BURROUGHS CORP BURROUGHS CORP	6071SECONDAV DETROIT 32 MICHIC 62 6071SECONDAV DETROIT 32 MICHIC 62 6071SECONDAV DETROIT 32 MICHIC 62 6071SECONDAV DETROIT 32 MICHIC 62 6071SECONDAV DETROIT 32 MICHIC 62	62 62 62 62 58							ACZ	48B 20B	113403663 502653803	202313573 502	3282C1574 0200C4000	117 079	315J1467 6731647	78406001415 011523 1434	649224		
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
BURROUGHS D104	BURROUGHS CORP	6071SECONDAV DETROIT 32 MICHIM357						52B			302	5120C1642067	983JA				6734324	649244	
BURROUGHS D105	BURROUGHS CORP	6071SECONDAV DETROIT 32 MICH16 58											38				4		
BURROUGHS D107	BURROUGHS CORP	6071SECONDAV DETROIT 32 MICH15 60	Z					34807	403234434		202133	1642C5563106	379				1114	3314	132022
BURROUGHS D201	BURROUGHS CORP	6071SECONDAV DETROIT 32 MICHIM159	Z					218	253753753	302563683	252	1280C2691090	833J8				1115	607353	923032
BURROUGHS D202	BURROUGHS CORP	6071SECONDAV DETROIT 32 MICHIM161	Z					228	103403803	302343733	202	5120C1132097	214J8				1115	5314	234022
BURROUGHS D203	BURROUGHS CORP	6071SECONDAV DETROIT 32 MICH15 61						248	863305305	863305305			164J8				11A4	6373	921162
BURROUGHS D204	BURROUGHS CORP	6071SECONDAV DETROIT 32 MICH1F259164	KZ					298	113693114	203623104		1791C3352	59				I 13	8314	234013
BURROUGHS D208	BURROUGHS CORP	6071SECONDAV DETROIT 32 MICHIM 62						24802	263704754	263704754	202	7680C1432099	8				I114	2373	223031
BURROUGHS D209	BURROUGHS CORP	6071SECONDAV DETROIT 32 MICH19 60						168	323			0810C1301	9				IH 4	7223	1011
BURROUGHS D825	BURROUGHS CORP	6071SECONDAV DETROIT 32 MICH1S162295	3					48850			102	1283C6154128							
BURROUGHS E101	BURROUGHS CORP	6071SECONDAV DETROIT 32 MICH18455383102						41D	506257257		173		262J137				1114	220023	332123
BURROUGHS E102	BURROUGHS CORP	6071SECONDAV DETROIT 32 MICH18459283112						41D	506257257		173		262J137				1114	22	2332113
BURROUGHS E103	BURROUGHS CORP	6071SECONDAV DETROIT 32 MICH18457303871						41D	516257307	426247297			902J1347				I 14	22	23232113
BURROUGHS 204	BURROUGHS CORP	6071SECONDAV DETROIT 32 MICH18454154202	ZZZZ					34D	115935136	855126			154J12347	602106C			B11413	4324	3133
BURROUGHS 205	BURROUGHS CORP	6071SECONDAV DETROIT 32 MICH18454134392	ZZZZ					34D	115935136	855126			154J12347	602106C			B11413	4324	3133
BURROUGHS 220	BURROUGHS CORP	6071SECONDAV DETROIT 32 MICH1C359324782	BZZZ					34D	204215405	184215405	153	1002C3743104	12347	253106C			B11423	543234	
CALDIC	UNIV OF CALIFORNIA	DIVOFEELENG BERKELEY 4 CALIFUS156124						34D	405166	644166			502J13				I12413	13632223	
CAT 400	MNEMOTRON CORP	45 S MAIL ST PEARL RIVER NY 12362133						03D	363		303	4000C7632	3478				I 14	1021	412041
CCC DDP 19	COMPUTER CONT CO	2251BARRYAV LOSANGELES64 CALIT162204						19B01	103393663	302363573	252502	4101C7762105	12347	62316 7			1115	238023	
CCC REAL TIME	COMPUTER CONT CO	2251BARRYAV LOSANGELES64 CALIS159334						25B03	253753	253503	374	3200Q8001072	3457				11A4	3324	421123
CCC TIME COMP	COMPUTER CONT CO	2251BARRYAV LOSANGELES64 CALIP162						10B00			105	2001M2002073	89E				I 5	124022	
CCC210 DIG DC	COMPUTER CONT CO	2251BARRYAV LOSANGELES64 CALIA 62																	
CDC 160A	CONTROL DATA CORP	501PARKAV MINNEAPOLIS15 MINNIP 62																	
CDC 1604	CONTROL DATA CORP	501PARKAV MINNEAPOLIS15 MINNIP 62						48B06	722253653		483	3282C1574105	12347	3032447			B217003415	835313	
CDC 3600	CONTROL DATA CORP	501PARKAV MINNEAPOLIS15 MINNIP 62						48B	402402702		152	2623C							
CDC 6600	CONTROL DATA CORP	501PARKAV MINNEAPOLIS15 MINNIP 62																	
CIRCLE	HOGAN LABS INC	155 PERRY ST NY 14 NY IS254803						44B		504206206			19407				121492	33	23
COLLINS C8200	COLLINS RADIO	COMM DATA SYS DIV DALLAS TEXIP162										3282					128		
COLLINS C8400	COLLINS RADIO	COMM DATA SYS DIV DALLAS TEXIP162										6552					8		
COMCOR	APPLIED DYNAM CORP	2275 PLATT RD ANN ARBOR MICHID 62																	
CORBIN	THE CORBIN CORP	5419 56TH PLACE RIVERDALE MDIS157						54D		163323234	802	3601C5462104	2				B136		
CUBIC AIR TRAF	CUBIC CORPORATION	5575KEARNYVILLARDSANDIEGOCALIM160						20B	254254	254254		203J58					I 4	3323	
CUBIC TRACKER	CUBIC CORPORATION	5575KEARNYVILLARDSANDIEGOCALID260						21BHS	203	103	214	0640T1281068	T			1530147	4132313	134123	
CYCLONE	IOWA STATE UNIV	JAMES IOWA US156	Z					40B	104994125	703964125	303	1021E4102091	34				121123	246153	
DATAKEEPE 1000	FORD INSTRUMEN DIV	31-10THOMSONAV LONG IS C INYIC155						34D	336	334		102J13457					I 1622	7213	62
DATAMATIC 1000	MINN HONEYWELL REG	2753 4AVS MINNEAPOLIS 8 MINNIB359225463						41B	234105235	583834215	123	2001C8162098	1234	40399AD			11344	35264	945274
DE 60	CLARY CORPORATION	408JUNIPEROST SANGABRIEL CALIB360183						62D	606227207	305147167		992J1347					I V4	122231	23132
DIANA	LAB FOR ELECTRONIC	1079COMMONWEALTHAVBOSTON MASIC160						06A	564315485	194265435	343	1002C3402090	377J347				112513	64941324	
DIG CORREL 580	BAIRD ATOMIC INC	33UNIVRD CAMBRIDGE 38 MASS IS156673						18B		903		222J48					I 413	134321	
DIGITRONIC COND	DIGITRONICS CORP	ALBERTSON AV ALBERTSON NY I1261									203	1021C6141085	237	15302 B					
DISTRIBUTAPE	MONROE CAL MACH CO	555 MITCHELL ST ORANGE NJ I1261453122											J3				4126123	239042	
DYSEAC	NATIONAL BUR STAND	CONNECTICUT VANNESAV WASHDCID154						45B	864305305	483215215	224	5120R2462087	23576				113692	24143223	
EDVAC	UNIV OF PENNSYLVAN	MOORE SCH ELEC ENG PHILA PA UF149474						44B	864295295		224	1021R4502090	204J1235			0758	B144633214	535224	
ELECOM 50	UNDERWOOD CORP	1 PARK AV NY 16 NY IC256223601						35D		654396	654	352J347					I 4220023	232172	
ELECOM 100	UNDERWOOD CORP	1 PARK AV NY 16 NY IS252603						30B	203			153J37					113422	23331200	
ELECOM 120	UNDERWOOD CORP	1 PARK AV NY 16 NY IS256973352						28D		334186196		284J237					B13442	43532233	
ELECOM 120A	UNDERWOOD CORP	1 PARK AV NY 16 NY IS254973						35D		334186196		345J237					B12442	4363	33
ELECOM 125	UNDERWOOD CORP	1 PARK AV NY 16 NY IB255104422						35D		334186196		345J12347					112442	2363	43
ELECOM 125FP	UNDERWOOD CORP	1 PARK AV NY 16 NY IC256454952						35D	355226226	334226226		354J12347					B12442	23535183	
ENIAC	UNIV OF PENNSYLVAN	MOORE SCH ELEC ENG PHILA PA UF146754						35D		204286247	604	1200C4080061	1				I51	2473	2523
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
EPSCO 275 FADAC FLAC FLAC I II FOSDIC	EPSCO INC AUTONETICS DIV US AIR FORCE RADIO CORP AMERICA NATIONAL BUR STAND	275MASSAV CAMBRIDGE 39 MASS 9150EIMPERIALHWY DOWNEY CALIIM PATRICK AIR FORCE BASE FLA CAMDEN 2 NJ CONNECTICUT VANNESSAV WASHDC	IT 61 IM 60 GS153504 IB153504 CG1259124			36800252153273 35B 45B 854335335 45B 244245245					123 782 182 302	1632C2952 144G2347+ 5120R2302080 4101C1843108	107 925J 12348 236 237 2D		30 5 5 1144 113 1135 133323	5 5 1144 13 33 3323			72 22 24736113 24441324 5332
GE 100 GE 210 GE 225 GE 250 GE 304	GENERAL ELECTRI GENERAL ELECTRI GENERAL ELECTRI GENERAL ELECTRI GENERAL ELECTRI	CO13430NBLACKCANYHWY PHOENIXAR CO13430NBLACKCANYHWY PHOENIXAR CO13430NBLACKCANYHWY PHOENIXAR CO13430NBLACKCANYHWY PHOENIXAR CO13430NBLACKCANYHWY PHOENIXAR	IC11359 IC259224 IB 60204402Z IB 62 IB 62		GZZ 20B	24D 20D 20B					323 323 203	4001C9522 8001C1633097 1642C3283	105 12347 1234+ 12		2347 403136E 1536447B 11433			152324 145114 141393	
GE 312 GE 412 GEORGE GEOTECH AUTOMAGE GEN MILLS ADEG	GENERAL ELECTRI GENERAL ELECTRI ARGONNE NAT LABOR GEOTECH AUTOMAGE GENERAL MILLS	CO13430NBLACKCANYHWY PHOENIXAR CO13430NBLACKCANYHWY PHOENIXAR 9700SOUTHCASSAV ARGONNE ILL 3401 SHILOH RD GARLAND TEX 1620CENAV MINNEAPOLIS13 MINNIC	IC260853 IC260853 GS157504 IC261153 IC260144		ACZZ Z	20B 20B01403 40B16					194205265 203 502263273	963195255 203 752		105J 175J 23457 C	1379 347 1533248 04GB8V43232463	1144 111700 04GB8V43232463 1211	3323 8342 3232463 1314	33133 8342 13 32 131162	
GEN MILLS APSA GUIDANCE FUNCT HAMP SH CCC 500 HAMP SH TRT 932 HONEYWELL 290	GENERAL MILLS NORTHROP AIRCR INC HAMP SHIRE ENG CO HAMP SHIRE ENG CO MINN HONEYWELL CO	1620CENAV MINNEAPOLIS13 MINNIC NORTHROP FLD HAWTHORNE CALIFIS 2300WASHSTNEWTONLOWFALLSMASSI 2300WASHSTNEWTONLOWFALLSMASSI 2753 4THAVS MINNEAPOLIS8MINN	IC160 IS156 IC2158803 IC2158803 IS158174			36B 42B 20B 22B 18B					124155166 105346346 434855805 224185535224185535 104764135	124155166 105346346 434855805 224185535224185535 104764135	103 893J 236 28 154J		7 37 236 28 359	1220247 11432 1622 1619233 B115	1216 432 622 619233 1393	1324921152 43832133 131370 131370 1380	
HONEYWELL 400 HONEYWELL 800 HONEYWELL 1800 HRB SINGER HUGHES AA 111	MINN HONEYWELL CO MINN HONEYWELL REG MINN HONEYWELL CO HRB SINGER INC HUGHES AIRCRAFT CO	2753 4THAVS MINNEAPOLIS8MINN 27534THAVS MINNEAPOLIS8 MINNIC 2753 4THAVS MINNEAPOLIS8MINN SCIENCE PARK STATECOLLEGE PAIC FLORENCE TEALESTCULVERCITYCA	IC 61 60984213 IC 62 IC 62 153401		ZZZ CIZZ 16B 17B	48B 48B 16B 17B					212 102202 204175175	3202C3843 3282C1574 122	118 122 163J 383J		134 G1234B 893 893	643646A B137 B137 12452	6334 B137 3313	341324 112081 13 21	
HUGHES BM GUID HUGHES D PAT HUGHES DIGITA HUGHES LRI X HUGHES M252	HUGHES AIRCRAFT CO HUGHES AIRCRAFT CO HUGHES AIRCRAFT CO HUGHES AIRCRAFT CO HUGHES AIRCRAFT CO	FLORENCE TEALESTCULVERCITYCA FLORENCE TEALESTCULVERCITYCA FLORENCE TEALESTCULVERCITYCA FLORENCE TEALESTCULVERCITYCA FLORENCE TEALESTCULVERCITYCA	IC 60 IC 61 IC 60 IC 60 IC 60		Z Z	19B 17B 19B 20B					624 843165165 843 843175175 264115215	624 843 843 843165165 883974195	0030C0570058 774J 39 T 9		9 39 T 9	1134 113 113 121	2353 42 43 23 82 134342	311021 322123 32 22 81	
HYDAC IAS IBM CPC IBM 305 IBM 604	ELECTRONIC ASSOCIA INST FOR ADV STUDY INT BUS MACH CORP INT BUS MACH CORP INT BUS MACH CORP	LONG BRANCH NJ ELECT COMP PROJ PRINCETON NJ 590 MADISON AV NY 22 NY 590 MADISON AV NY 22 NY 590 MADISON AV NY 22 NY	IC 62 US152 IB449753222 IC 58194322R IB553263641			40B 17D 06A 17D					703704115 764136156764 306127237 504146176504	403674115305 764136156764 306127237 504146176504	1024E4101092822J 0090V1260052 127G123471530747 0090V1260054	1 14 127G 1		121153 17513 2023 17513	42 936163 42142224 732123	242113 936163 42142224 732123	
IBM 607 IBM 608 IBM 609 IBM 610 IBM 632	INT BUS MACH CORP INT BUS MACH CORP INT BUS MACH CORP INT BUS MACH CORP INT BUS MACH CORP	590 MADISON AV NY 22 NY 590 MADISON AV NY 22 NY 590 MADISON AV NY 22 NY 590 MADISON AV NY 22 NY 590 MADISON AV NY 22 NY	IB450 IB258 IB 57553122 IB354 IC 58123301	132 162 122 112 1		17D 31D 41D 52D 41D					524136166524 224116136224 224146186 287128128 213437	524136166524 224116136224 224146186 287128128 213437	0370V9961063 0400C1122067 0320C1292 892J3 137	1 1 1 892J3 137		17533 175 26 81 11012	141133 233123 131113 131172 1274062		
IBM 650 IBM 701 IBM 702 IBM 704 IBM 705 I II	INT BUS MACH CORP INT BUS MACH CORP INT BUS MACH CORP INT BUS MACH CORP INT BUS MACH CORP	590 MADISON AV NY 22 NY 590 MADISON AV NY 22 NY 590 MADISON AV NY 22 NY 590 MADISON AV NY 22 NY 590 MADISON AV NY 22 NY	IB554 IB353234502Z IB353364692HZ IB458524972FT IB457594143FHZ	114242 502Z 233 24972FT 143FHZ	PQZZ 35D03 06A 36803543134144 06A	35D03 368 06A 36803543134144 06A					294106126963 243444444 233 123 173	294106126963 243444444 233 123 173	0600C2101073216R 4101C1473101594J 1002C6002095364J 3282C1184110594J 4002C2403101364J	134 1245 1247 1245 1247	0647B 1531047 1531047 1531047 1531047	1114 121543 1414 B116 16	130043 14842324 2474 34 84 24 742334		
IBM 705 III IBM 709 IBM 1401 IBM 1410 IBM 1620	INT BUS MACH CORP INT BUS MACH CORP INT BUS MACH CORP INT BUS MACH CORP INT BUS MACH CORP	590 MADISON AV NY 22 NY 590 MADISON AV NY 22 NY 590 MADISON AV NY 22 NY 590 MADISON AV NY 22 NY 590 MADISON AV NY 22 NY	IB357215433HFZZ IB457265553FU IC560134252Z IB460 IS 59214542FZZ		HFZZ FU 06A03304205225 06A15 34D	06A 36803543134144 06A03304205225 06A15 34D					963774325 3543134144 205225 452 964186176	963774325 3543134144 205225 452 964186176	8002C4803107366J 3282C1184110594J 1602C9602099127G 4002C2403107127G 6002C2043100	1247 1234 1234 1234 137	6236047 1534847 6330647 6231047 137	16 115 IV24 7 124	152344 151334 7314736173 14 3313		

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
IBM 7030	INT BUS MACH CORP	590 MADISON AV NY 22 NY	IB260		FHKZ	64B16				142262942	132502	2623C1685	131	438G12475	623AA46	B172	25	152374	
IBM 7040	INT BUS MACH CORP	590 MADISON AV NY 22 NY	IT 61245353		CFZZ	36B03163403543	891			402		3282C11841	151	178G12348	9035047	I11500		1451	
IBM 7044	INT BUS MACH CORP	590 MADISON AV NY 22 NY	IT 61175263		3FZZ	36B03502303503	831			122		3282C11841	201	178G12348	9035047	B11500		1451	
IBM 7070	INT BUS MACH CORP	590 MADISON AV NY 22 NY	IB 60814173		HF	35D99723115904				602		9991C3503	108	177G1247	6234047	B117		242324	
IBM 7072	INT BUS MACH CORP	590 MADISON AV NY 22 NY	IS 61874173			34D99123403643				283523	602	3002C1024	112		127	2032047	B11300	737193	
IBM 7074	INT BUS MACH CORP	590 MADISON AV NY 22 NY	IB 61135293		FHZZ	35D99103563703				402		9991C3503	109	177G1247	6234047	B16		34 24	
IBM 7080	INT BUS MACH CORP	590 MADISON AV NY 22 NY	IB 61225483		HFZZ	06A 133144214				222		1603C9603	116		1247	6235047	I 16	44	141324
IBM 7090	INT BUS MACH CORP	590 MADISON AV NY 22 NY	IB46029563		FUZ	36B03432183203				222		3282C11841	117		124	6238047	B117		632334
IBM 7094	INT BUS MACH CORP	590 MADISON AV NY 22 NY	IB 62295643		CFZZ	36B07402702103331				102		3282C1054	117		124	1748088	B117		
IBM 7950	INT BUS MACH CORP	590 MADISON AV NY 22 NY	IB 62																
ILLIAC	UNIV OF ILLINOIS	DIGITAL COMP LAB URBANA ILL	UB152304			40B 933764954				403724904	273	1021E41020	092	514J3457					
INTELEX AIR RE	INTELEX SYSTEMS INC	67 BROAD ST NEW YORK 4 NY	IC260			34D09953				853	103	1002C3403	105	5350347		513488F	I114		
ITT BANK LN PR	ITT LABORATORIES	500WASHINGTONAV NUTLEY 10 NJ	IC161		203ZZ	41D 174884				174884	602	1000C4081	0884	14J2347		303AB8F	I115	1434	638143
ITT SPES 025	ITT LABORATORIES	500WASHINGTONAV NUTLEY 10 NJ	IB161105		Z	33BAA163				302	802	1642C5403	108	225J12454		1531647	I111	5454	341234
JOHNNIAC	THE RAND CORPORAT	1700MAINST SANTAMONICA CALIF	IS154			40B 253404404				103394394	153	4101C1633	100	494J14					
JUKEBOX	AUTONETICS DIV	9150EIMPERIALHWY DOWNEYCALIF	IB259		Z	40B 965206206				544116116				174G245					
LEEDS NOR 3000	LEEDS NORTHRUP CO	4901STENTONAV PHILA 44 PA	II 60			21B 914365365				134275275				364J379					
LEPRECHAUN	BELL TELE LABS INC	WHIPPANY NJ	17156			17B 403374524					802203	1021C1842	094		37				
LGP30	LIBRASCOPE DIV	808WESTERNNAV GLENDALE1 CALIF	IB454		503112Z	32B 205176176				254176176				133J1346+					
LIBRA AIR TRAF	LIBRASCOPE DIV	808WESTERNNAV GLENDALE1 CALIF	IB259			27D 323374384				223364374	103	4001C1093	100	695J789F		3033247	I114	2413	332133
LIBRA ASN 24	LIBRASCOPE DIV	808WESTERNNAV GLENDALE1 CALIF	IF259			25B 624425445				164395415				643J8					
LIBRA CP 209	LIBRASCOPE DIV	808WESTERNNAV GLENDALE1 CALIF	IF357			14B 593593184				593593184				39					
LIBRA L70	LIBRASCOPE DIV	808WESTERNNAV GLENDALE1 CALIF	IFM 62																
LIBRA MK 38	LIBRASCOPE DIV	808WESTERNNAV GLENDALE1 CALIF	IF358			18B								124J389					
LIBRA MK 130	LIBRASCOPE DIV	808WESTERNNAV GLENDALE1 CALIF	IF160			19B01403234254				163214234	203	4101C7772	096		389				
LIBRA 407	LIBRASCOPE DIV	808WESTERNNAV GLENDALE1 CALIF	IF260			22B				104205405				663J89					
LIBRATROL 500	LIBRASCOPE DIV	808WESTERNNAV GLENDALE1 CALIF	IB460843		Z	31B 775236236				254156156				134J3789					
LIBRATROL 1000	LIBRASCOPE DIV	808WESTERNNAV GLENDALE1 CALIF	IB 60		Z	32B01105176176				254166166				264J3467E					
LINCOLN CG 24	LINCOLN LABORATORY	MASSINSTECH LEXINGTON73 MASS	U7158105			25B 243843843				123743743	123	8191C2223	103		237A	1530747			
LINCOLN M TEST	LINCOLN LABORATORY	MASSINSTECH LEXINGTON73 MASS	US154			16B 602403743				202363703	2025624	4101C6252	095	394J1235					
LINCOLN TX 0	LINCOLN LABORATORY	MASSINSTECH LEXINGTON73 MASS	U7159			18B 602105105				102105105	302602	6552C1184	116		357				
LINCOLN TX 2	LINCOLN LABORATORY	MASSINSTECH LEXINGTON73 MASS	US158		Z	38B64482143503				142113463	222	6962C2644	121		35679	373AC6B	I117	826453	2432
LITTON C7000	LITTON INDUSTRIES	5500CANOGAAV WOODLANDHILLSCAL	58			21B03402263463				202234234	202	1281C2822	098	284J37					
LITTON DATA AS	LITTON INDUSTRIES	5500CANOGAAV WOODLANDHILLSCAL	11 60			32B 123813813				602693693	602	1021C3282	097	623J589					
LITTON 20 40	LITTON INDUSTRIES	336NFOOTHILLRD BEV HILLS CALIF	IS153153			18B								583J5689					
LOGISTICS	ENG RESEAR ASS INC	DIV REMRAND MINNEAPOLIS MINN	IF153354			41D 504754					114	0150V61200	068	125J13					
MAGLOC I	SPERRY GYROSCOPE CO	GREAT NECK LI NY	IM 62																
MAGNEFILE B	ELEC CORP AMERICA	BUS MACH DIV CAMBRIDGE42MASS	11154203			27D				157				114J7					
MAGNEFILE D	ELEC CORP AMERICA	BUS MACH DIV CAMBRIDGE42MASS	11153503			99D				107				125J7					
MANIAC I	UNIV OF CALIFORNIA	POBOX 1663 LOS ALAMOS NMEX	US152254			40B				803105105	123	1021E41020	097	404J2347					
MANIAC II	UNIV OF CALIFORNIA	POBOX 1663 LOS ALAMOS NMEX	US157354		V	48B				184304	184304552	1642E8003	102	153J12347					
MANIAC III	UNIV OF CHICAGO	INST COMP RES CHICAGO 37 ILL	US160			48B08483713813				423653753	102	8191C3930	116		2347	3730448	B0123	1424	236162
MELLON INSTITU	UNIV OF PITTSBURGH	MELLONINSINDRE PITTSBURGH PA	US154			64B 506506157				654				105J37					
MERLIN	BROOKHAVEN NAT LAB	UPTON NY	GS160604			48B 802144334				352134324	4602	8191E4003	108		2347				
MIDAC	UNIV OF MICHIGAN	ENG RES INST YPSILANTI MICH	US155			45B				483225225	483	5120Q2302	087	703J2357					
MINIAC	MARCHANT RESEA INC	OAKLAND 8 CALIF	IS153853			34D				304146156				233J3					
MINIAC C II	MARCHANT RESEA INC	ELEC DIV OAKLAND 8 CALIF	IS155853			35D				116246266	454146156			144J378					
MISTIC	MICHIGAN STAT UNIV	EAST LANSING MICH	US157			40B				104105115	803984115	1742C6963	105		1357				
MOBIDIC	SYLVANIA ELEC PROD	100 FIRST AV WALTHAM MASS	1L158			38B				163503154		4101C1563	103		237				
MOBIDIC A	SYLVANIA ELEC PROD	100 FIRST AV WALTHAM MASS	1L160		MZ	38B04163863883				802783883	802	8191C3283	108		137	4536348	I125	3463	342214

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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
MOBIDIC B	SYLVANIA ELEC PROD	100 FIRST AV WALTHAM MASS	IL160		MZ	38B07	423883	343803	802	8191C3283	106	506G137	4536348	1125	3463347214				
MOBIDIC CD-7A	SYLVANIA ELEC PROD	189 B ST NEEDHAM 94 MASS	IL160		MZ	38B07	163863883	802783803	802	8191C3283	106	506G137	4536348	1115	3463545273				
MODAC 404	AIRBORNE INSTR LAB	DEER PARK LONG ISLAND NY	IC154104			20D	256	244				424J13		1013	23831213				
MODAC 410	AIRBORNE INSTR LAB	DEER PARK LONG ISLAND NY	IC155124			34D		504705705				174J134		1062	33432113				
MODAC 414	AIRBORNE INSTR LAB	DEER PARK LONG ISLAND NY	IB156154			20D	805805805	294805805	294	0020C0410052	124J13			1023	33534133				
MODAC 5014	AIRBORNE INSTR LAB	DEER PARK LONG ISLAND NY	IC154853			20B	323					204J3		H2452	12 2162				
MONROBOT MU	MONROE CAL MACH CO	555 MITCHELL ST ORANGE NJ	IL156			96B	805686776					205J2347		1234					
MONROBOT III	MONROE CAL MACH CO	555 MITCHELL ST ORANGE NJ	IS155			68D	127547547					143J37		114482	1223 13				
MONROBOT V	MONROE CAL MACH CO	555 MITCHELL ST ORANGE NJ	IS155863			68B	124544544					203J37		14482	1053 23				
MONROBOT VI	MONROE CAL MACH CO	555 MITCHELL ST ORANGE NJ	IS 55			68B	137607607					143J1347		1244					
MONROBOT IX	MONROE CAL MACH CO	555 MITCHELL ST ORANGE NJ	IC358962			62B	126136546305					921J178		1471	13721142				
MONROBOTXIX	MONROE CAL MACH CO	555 MITCHELL ST ORANGE NJ	IC259243701			32B	905346507	305286507				333J137		1214	214223821142				
NAREC	US NAVAL RESEA LAB	WASHINGTON 25 DC	GB156155		Z	48B	223454654	602454654	302802	1642C7863	114	394J234	723168A	1211	135334241283				
NATIONAL 102A	NATIONAL CASH REG	DAYTON 9 OHIO	IS353703242			42B	206376386	745256266				433J2347		113442	83832123				
NATIONAL 102D	NATIONAL CASH REG	DAYTON 9 OHIO	IS255653242			37D	785356376	405156156				433J12347		113442	83832223				
NATIONAL 107	NATIONAL CASH REG	DAYTON 9 OHIO	IB153105			37D	156406406					414J12347	202998B	113582	23 2314				
NATIONAL 303	NATIONAL CASH REG	DAYTON 9 OHIO	IC 54144422			37D		802303303	155	0090V0310		912J234		113	32 63331023				
NATIONAL 304	NATIONAL CASH REG	DAYTON 9 OHIO	IB259374572NZ			60A101	24135355	603135345	603	4801C2883	107	12347	3036448	BV34	4383441214				
NATIONAL 315	NATIONAL CASH REG	DAYTON 9 OHIO	IB150833132CNZ			100B24	23294105363		602	4002C4083	108	1234	6030847	1423					
NATIONAL 390	NATIONAL CASH REG	DAYTON 9 OHIO	IS260563142			41D	116257407		115	2000C8161	086	134T		1144	1343438113				
NORC	INT BUS MACH CORP	590 MADISON AV NY 22 NY	IS155255			54D		153313234	802	2002E1094	121	245D		B13214	3425				
NORDEN VOTE T	NORDEN DIV	3501HARBORBLVD COSTAMESA CAL	IL1160604			15D	333	662	302	6000C1022095		16		I	4214353431314				
NUMERICORD	CONCORD CONTRO INC	1282SOLDIERFLDRD BOSTONOKMASS	ID260224						103	3340C1141081		23		4623253632253					
OARAC	GENERAL ELECTRI CO	13430BLACKCANYHWW PHOENIXAR	IS153184			35D	8751861869	13804125				374J27		112413	73248163				
OKLAHOMA UNIVE	OKLAHOMA UNIVERSIT	NORMAN OKLA	US151		AZ	54B	113114114	302104104	402	8191E5153	101	23478	086B	0131	23332414				
ORACLE	OAKRIDGE ARGONNE	OAKRIDGE TENN ARGONNE ILL	GS160254			40B	703484594	802	183	2051E8192097		2367D	80204BG	121453	122274				
ORDFIAC	UNDERWOOD CORP	LEECOMPDIV LONG IS CITY6NY	IB154204			28D	816926976	175176226				284J1		IH3462	636381				
ORDVAC	UNIV OF ILLINOIS	DIGITAL COMP LAB URBANA ILL	UF152604		FO	40BHS	143704704		153	4101C1643	100	404J1237		1211	332392448133				
PACKARD BE 250	PACKARD BELL CORP	1905ARMACOSTAVLOSANGEL25CAL	IS360403122			22B01	114374354	123284254	155	3222C7203087		12347	2020647	1114	4223123012				
PROG DATA PR 1	DIGITAL EQUIP CORP	MAYNARD MASS	IS260114			18B	502304604	751304604		5024101C7352		357	1536447	1115	3333821123				
PROG DATA PR 2	DIGITAL EQUIP CORP	MAYNARD MASS	IL 62																
PROG DATA PR 4	DIGITAL EQUIP CORP	MAYNARD MASS	IL 62																
PENNSTAC	PENNA STATE UNIV	ELEC ENG UNIVERSITY PARK PA	US155104			37D	345535745	943305515				933J37		11A5	136063738133				
PERK I-11	AUTOMATION MGT INC	25 BRIGHAM ST WESTBORO MASS	I3460102500			03D						175P8		B	750 10 1021				
PHILCO 212	PHILCO CORPORATION	3900WELSHRD WILLOW GROVE PA	IB 62		F														
PHILCO CXPQ	PHILCO CORPORATION	3900WELSH RD WILLOW GROVE PA	IF157165			48B07453			123	4101C1973	102	794J137	153038H	1211	515312935214				
PHILCO 1000	PHILCO CORPORATION	3900WELSH RD WILLOW GROVE PA	IB156			36B		552134204		1234101C1473		1237		12	13				
PHILCO 2000	PHILCO CORPORATION	3900WELSHRD WILLOW GROVE PA	IB 57	343ZZZZ		48B32772463493	172403433	202		3282C1574	119506J1234	903AA1A	B2134	26413542323					
PHILCO 2400	PHILCO CORPORATION	3900WELSHRD WILLOW GROVE PA	IB 62																
PHILCO 3000	PHILCO CORPORATION	3900WELSH RD WILLOW GROVE PA	IS260			22B	924425425	134285285				364J3578		11A4	101343724052				
PRODAC 510	REMRAND UNIVAC DIV	STPAUL MINN WESTI PITTSBGHPAID	62																
PRODAC 580	REMRAND UNIVAC DIV	STPAUL MINN WESTI PITTSBGHPAID	62																
QUAC	NORTHROP AIRCR INC	NORTHROP FLD HAWTHORNE CALIF	IB254			18B						864G23		432	92232133				
RASTAC	LAB FOR ELECTRONIC	1079COMMONWEALTHBOSTON15MASS	11 60204			OPT						217J37		V14121283	145133				
RASTAD	LAB FOR ELECTRONIC	1079COMMONWEALTHBOSTON15MASS	11 59204			OPT						217J3578		V14121283	145133				
RAYCOM	RAYTHEON MANUFA CO	WALTHAM MASS	IC153			38D						124							
RAYDAC	RAYTHEON MANUFA CO	WALTHAM MASS	IS153305			36B	115135155	483214384	164	2181H7832	2089	27		BH4553	243423				
RCA BIZMAC I	RADIO CORP AMERICA	ELECDATAPROCSYSDIV CAMDEN2NJ	IC257455			06A		124164	203	4101C2462	2091	114J1234+		13	4342274252434				
RCA BIZMAC II	RADIO CORP AMERICA	ELECDATAPROCSYSDIV CAMDEN2NJ	IB256455			06A		124164	203	8191C4912094	204J134			13	453 14443234				
RCA 110	RADIO CORP AMERICA	ELECDATAPROCSYSDIV CAMDEN2NJ	IL 61			24B07563734874				2044101C9802		125J8		11	43				

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RCA 200	RADIO CORP AMERICA	ELECDATAPROCSYSDIV CAMDEN2NJ	IA160			20B						0160C3200		38		10	1332	21 40
RCA 300	RADIO CORP AMERICA	ELECDATAPROCSYSDIV CAMDEN2NJ	ID160			13B	243963174	123863164	302			9211C1203	106	379		1117	5323	12 12
RCA 301	RADIO CORP AMERICA	ELECDATAPROCSYSDIV CAMDEN2NJ	IB157	204402	ECZ	OPT	214785		702			2002C6802	100	1234	7521241	BV26		348224
RCA 501	RADIO CORP AMERICA	ELECDATAPROCSYSDIV CAMDEN2NJ	IB359	594123	ECZ	OPT		334575185	153			C1974	110	1234	673626A	V2600		636153
RCA 601	RADIO CORP AMERICA	ELECDATAPROCSYSDIV CAMDEN2NJ	IB161	53132	ECZ	OPT	982143293	602103253	102			C1974	123	1234	1846468	BVV3		446123
RCA 604	RADIO CORP AMERICA	ELECDATAPROCSYSDIV CAMDEN2NJ	IB 62															
RD 900	LAB FOR ELECTRIC INC	1079COMMONWEALTHBOSTON15MASS	IC 62											507J	58			
READIX	JB REA CO INC	2202BROADWAY SANTAMONICA CAL	IB556	703242		35D	444256406	444166246	224			005051740	059	154J	12347	1021045	B 1032	4381123
RECOMP I	AUTONETICS DIV	9150EIMPERIALHWY DOWNEYCALIF	IB156			40B	205216216	105206206						833G	378		1214	237332 22
RECOMP II	AUTONETICS DIV	9150EIMPERIALHWY DOWNEYCALIF	IS257	953302ZZ		40B	544116116	135126136						164G	1357		B214	2314524122
RECOMP III	AUTONETICS DIV	9150EIMPERIALHWY DOWNEYCALIF	IS 62			40B			175			0000/0000	000	164G	37		B	60
RECAP	AUTONETICS DIV	9150EIMPERIALHWY DOWNEYCALIF	IB160			40B	205226236	544116116						174G	3578	30332 5	B214	1314624022
RICE UNIVERSIT	RICE UNIVERSITY	HOUSTON 1 TEXAS	US161	404	Z	54B	08503853853	403753753	103			8191E4433	106	234	3230468	B115	432314	2442
RPC 4000	ROYAL MCBEE CORP	PORT CHESTER NY	IB360	873172Z		32B	01504176176	254176176						264J	12347		B1V4	729062
RPC 9000	ROYAL MCBEE CORP	PORT CHESTER NY	IB359	124242Z		41D	1152953552	34205355	881			0770M3141	096	1347		1614		221132
RW 300	TRWOOLRIDGE INC	8433FALLBROOKAV CANOGAPARKCA	IS559	983262ZZ		18B	784305315	784305315	215					284J	2379E	2620848	1HA4	116243
RW 400	TRWOOLRIDGE INC	8433FALLBROOKAV CANOGAPARKCA	IC260			26B	363803134		103			C		224J	3467	104648A	1127	142123
SCRIBE	NORDEN DIV	58 COMMERCE RD STAMFORD CONN	IB 60			03D			143			6000C1022	087	313J	14		V14	3353335143
SDS 910	SCIEN DATA SYS INC	1542FIFTEENTH SANTAMONICACAL	IS162	563182F4D		24B	01163254804	802224784	802			1642C3933	107		12467	4233247	1114	001333924013
SDS 920	SCI DATA SYSTE INC	1542FIFTEENTH SANTAMONICACAL	IT262	893252F4D		24B	01163323224	802243224	802			1642C3923	107		13467	4233247	1114	001343132113
SDS 930	SCI DATA SYSTE INC	1542FIFTEENTH SANTAMONICACAL	IC 62															
SEAC	NAT BUR STANDARDS	CONNECTICUT-VANNESSAV WASHDC	GB150			45B	824305305	483215215	123			2051E9232	096		12347	1010547	1144	23 24248133
SPEC III	COMPUTER CONTR CO	2251BARRYAV LOSANGELES64CALI	IB160	253		13B	224	133	214			1280M2081	070		579		1114	3223614032
SPEDAC 220	HAZELTINE CORP	LITTLE NECK NY	IB 62															
STORED PRO DDA	INT BUS MACH CORP	590 MADISON AV NY 22 NY	IS160			22B	223		223			2190M3361	082		185		15 4	3292311031
SWAC	NAT BUREAU STANDAR	CONNECTICUT-VANNESSAV WASHDC	GS151	404		37B	643374	532304	802			2560E1002	091	822J	147		1145	63 4334
SYLVANIA M64	SYLVANIA ELEC PROD	189 B ST NEEDHAM 94 MASS	ID 61		M	25B	02103703723	123723743	202402			1642C4103	113		378	00	111500	432113
SYLVANIA 59400	SYLVANIA ELEC PROD	189 B ST NEEDHAM 94 MASS	IB260	824163ACZ		37B	802433443	402393403	402			3282C1244	105237G	12347	903648A	B11	4423	244224
SYLVANIA UDOFT	SYLVANIA ELEC PROD	189 B ST NEEDHAM 94 MASS	IS160			21B		502103114	502			8191C1803	106		1479		1114	23522424224
TARGET INTER	REMRAND UNIVAC DIV	315 PARK AV NY 10 NY	IB160		DZ	24B	103253453	502203403	282			1222C3073	110		27	3030547	1117	2413237153
TECHNITROL 180	TECHNITROL ENGINEE	22751 NORTH 4TH ST PHILA33PA	IS 55	504		48B		483325325	483			5120Q1462	087		237		1144	33 34547114
TELE BID ASKED	TELEREGISTER CORP	445FAIRFIELDV STAMFORD CONN	IC153			24B								104J				
TELE MAG IN C	TELEREGISTER CORP	445FAIRFIELDV STAMFORD CONN	IC156	304		37B								155J	13			
TELE SPEDDH	TELEREGISTER CORP	445FAIRFIELDV STAMFORD CONN	IS252					153						155J				
TELE TELEFILE	TELEREGISTER CORP	445FAIRFIELDV STAMFORD CONN	IC 57			03D	164803803	803	163			1502C5102	090	516M	1234+	1235446	J 14	3324
TELE UNI AIR	TELEREGISTER CORP	445FAIRFIELDV STAMFORD CONN	IC356				176	103						135J	3478		543	33 82
TELEQUOTE II	TELEREGISTER CORP	445FAIRFIELDV STAMFORD CONN	IC 62															
TIM II	LAB FOR ELECTRIC INC	75 PITTS ST BOSTON 14 MASS	IC 54	253		41D		155155155	705303	0011C0340	048885J	347					1114	22 231321
TRW CM 403	TRWOOLRIDGE INC	8433FALLBROOKAV CANOGAPARKCA	IT 61															
TRW 130	TRWOOLRIDGE INC	8433FALLBROOKAV CANOGAPARKCA	IB162															
TRW 330	TRWOOLRIDGE INC	8433FALLBROOKAV CANOGAPARKCA	IM 62		Z		264					1003						
TRW 340	TRWOOLRIDGE INC	8433FALLBROOKAV CANOGAPARKCA	ID162			28B	163464474	802454464	802			1602C4643	118425J	1237+		711	4002363	131113
TRW 530	TRWOOLRIDGE INC	8433FALLBROOKAV CANOGAPARKCA	II 62															
UDEC I II III	BURROUGHS CORP	6071SECONDAV DETROIT 32 MICH	IB255	504		34D	224405605	134395595	883			1000C3401	076184J	2347		12V4	33 633442	
UNDERWOOD DATA	UNDERWOOD CORP	ONE PARK AV NY 16 NY	II 62									0160C0960		1347				
UNIVAC DIG TR	REMRAND UNIVAC DIV	315 PARK AV S NY 10 NY	IC 22	353		15B	01243134134	802	252802	5120C7682	095		378			1115	001353	724042
UNIVAC FILE 0	REMRAND UNIVAC DIV	315 PARK AV S NY 10 NY	IC457	304432		41D	865246286	125166206				116J	12347	1031047	1136			742324
UNIVAC FILE 1	REMRAND UNIVAC DIV	315 PARK AV S NY 10 NY	IC457	304422		72A	865246286	125166206	904			0200C1441	062	116J	12347	1031047	1136	741334
UNIVAC LARC	REMRAND UNIVAC DIV	315 PARK AV S NY 10 NY	IB160	605144ZZ		41D	402802283	402802283	402			9752C3984	120	726J	2345	2534048	B113	354315
UNIVAC S S 80	REMRAND UNIVAC DIV	315 PARK AV S NY 10 NY	IB459	354602YZ		35D	03145135135	853	122			827J	1247	2531047	1126	229244		449214

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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
UNIVAC S S 90	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IB459354602YZ	35D03	145135135853										817J	124	2531047	1126229244	145173	
UNIVAC STEP	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IB460174352YZ	35D03	145135135853										817J	124	2531047	1126229244	145173	
UNIVAC 60	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IB 55753901										0060V2040		1			1 3423	4133	
UNIVAC 120	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IB255973112										4040120V4200		1			1 34	834133	
UNIVAC 490	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IC161155	Z	30B	1035238432	10403723202					3282C9823	117	397J	1247	2531248	1 17		34	
UNIVAC 1000	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IM 61	J	24B01	123564684					701302	6911T1663	114		389E	000		1115003314	321091	
UNIVAC 1004	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IM 62533132		06A	184897477					802	9610C5862	109		14					
UNIVAC 1020	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IM 61	J	24B01	123174224					701302	7681T1843	114		2389E			71115003314	221051	
UNIVAC 1101	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IB155504		24B		502264324	103			4101C9832	100	394J	37				111133	23143324	
UNIVAC 1102	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IS255145		24B		173264344						204J	367				11 33	33241233	
UNIVAC 1103	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IS353294		36B	443244494	283224474	802			1232C4423	107	594J	12347				B12543	93749244	
UNIVAC 1103A	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IS353115		36B	443244494	283224474	802			1232C4423	107	594J	12347				B12553	63749244	
UNIVAC 1105	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IS359195333	ZZZZ	36B	603124514	363114474	802			1232C4413	107	125J	12347	25324488	125831324	253374			
UNIVAC 1107	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IB 62225	ACFZ	36B15	402133313	801702243	301			6552C2364	121	237J	12347	12412488	B 17		34 23		
UNIVAC 1206	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IT 61594	ZZ	30B07	163733114	962733114	362802			3282C9833	114	197J	13457	13412488	1115001444	331123			
UNIVAC I	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IS3511754133		36B			103			2051C7372	099		1237					5352	
UNIVAC II	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IB358974193		41D	534225405	284185375	224			1001H4082	090		12347				I21453	24844224	
UNIVAC III	REMRAND UNIVAC DIV315 PARK AV S NY 10 NY	IB360704133	CWZ	41D	164175305	124175305	403			2001C8162	093		1234				I214531324	152224	
UNIVERSAL D TR	US NAVAL RESEA LAB WASHINGTON 25 DC	GB160354		24B15	902134204	902194204	102			3282C7863	119	966J	1234	1343249	11A6		741324		
VERDAN	AUTONETICS DIV 9150EIMPERIALHWY DOWNEYCALIF	IS457		24B	164	803205205						403G	378				I124	131432	81
WEDILOG	WWANG LABORATPRIES CAMBRIDGE 41 MASS	IS154203		17D		105105105							167				1 762	2223	42
WESTING AIRB	WESTINGHOUSE ELEC AIRARMDIV BOX746 BALTO 3 MD	IS260		24B03	302203403	102203403	501			5121C1113	116		8			0147	1115	832423	22
WHIRLWIND I	MASS INST TECHNOL DIG COMP LAB CAMBRIDGE31MASS	US150		16B	153343643	802233473	102702			6141C9832	110	594J	237A				I11514	14156224	
WHIRLWIND II	MASS INST TECHNOL DIG COMP LAB CAMBRIDGE31MASS	US150		16B	223383713	802233473	702702			6141C9832	101	594J	2345+	3910446			I11714	14254244	
WHITESAC	COMPUTER RESE CORPNAT CASH REG DAYTON 9 OHIO	11		37D		156406406						345J	17				I12492	531472	
WISC	UNIV WISCONSIN	DEPTOFELECENG MADISON 6 WIS	US254									102435M					013423	421441	
WRU SEARCH SEL	WESTERN RESER UNIV	CENDOCOMRES CLEVELAND6 OHIO	US158										34						

V. CONCLUSIONS

1. If ASDEC is maintained, improved, and perhaps raised to a slightly higher order of sophistication, it can very well prove to be an effective tool for selecting and evaluating computing systems for specific applications from the national pool of existing or available systems, both from the standpoint of physical acquisition or temporary usage.
2. Accomplished once and for all, ASDEC could eliminate the need for preparing a chart of comparative characteristics every time each organization seeks to acquire a computing system for any application. This can be a very time consuming task. If kept up to date, an ASDEC chart provides a good starting point for preparing a computer applications study.
3. ASDEC actually is a condensation or digest of the pertinent data contained in rather bulky survey reports, conveniently tabulated, and displayed in a minimum of space, particularly suited for automatic selection and evaluation.
4. The hit-and-miss procedure of comparing characteristics, quite a soul-searching task can be eased, reduced to a minimum, or eliminated through the use of ASDEC.

AD <u>Accession No.</u> Ballistic Research Laboratories, AFG AUTOMATIC SELECTION OF DIGITAL ELECTRONIC COMPUTERS (ASDEC) Martin H. Weik, Violet J. Confer and Ralph R. Rosenberg BRL Report No. 1176 October 1962 DA Proj No. 503-06-002 UNCLASSIFIED Report Engineering and programming condensed descriptions of 327 electronic digital computing and data processing systems in the United States are given in a set of comparative charts, automatically prepared from a deck of punched cards. A method for automatic selection and evaluation of computing and data processing systems is described.	AD <u>Accession No.</u> Ballistic Research Laboratories, AFG AUTOMATIC SELECTION OF DIGITAL ELECTRONIC COMPUTERS (ASDEC) Martin H. Weik, Violet J. Confer and Ralph R. Rosenberg BRL Report No. 1176 October 1962 DA Proj No. 503-06-002 UNCLASSIFIED Report Engineering and programming condensed descriptions of 327 electronic digital computing and data processing systems in the United States are given in a set of comparative charts, automatically prepared from a deck of punched cards. A method for automatic selection and evaluation of computing and data processing systems is described.
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